

# PATENT SPECIFICATION

1,010,632

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## COMPLETE SPECIFICATION

### DRAWINGS ATTACHED

#### Improvements in or relating to Hand-Operable Electrical Lighting Devices

- I TADAHICHI WADA, a Japanese National, of No. 1 Manuela, Shibatamuracho-1-chome, Minatoku, Tokyo, Japan, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—
- This invention relates to hand-operable electrical lighting devices of the type suitable for road traffic purposes and also suitable for use by medical operators and similar workers.
- According to one feature of the present invention an electrical lighting device to be worn on the hand comprises a front portion shaped to fit the palm of the hand integral with a back portion shaped to fit the back of the hand, the front portion having on its outside surface a holder for at least one electric light bulb and the back portion having on its outside surface a holder for a battery, and a switch positioned on the device to be operated by the thumb.
- According to another feature of the present invention an electrical lighting device to be worn on the hand comprises a U-shaped clip having a bulb holder on the outside surface of one limb of the clip, a battery holder on the outside surface of the other limb of the clip and a switch positioned on the clip between the limbs to be operated by the thumb when the clip is fitted on to the hand with the bulb holder located on the palm of the hand and the battery holder located on the back of the hand.

The invention will be described further, by way of example, with reference to the accompanying drawings, in which:

Fig. 1 is a front view showing one embodiment of the present invention, attached to the palm of the hand.

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Fig. 2 shows part of the embodiment of Fig. 1, viewed at the back of the hand, 45  
Fig. 3 is a partial sectional view along the line A - A of Fig. 1.

Fig. 4 is a front view showing another embodiment of the present invention,

Fig. 5 shows part of the embodiment of Fig. 4 viewed at the back of the hand, 50

Fig. 6 is a partial sectional view along the line B - B of Fig. 4,

Fig. 7 is a front view showing a further embodiment of the present invention, 55

Fig. 8 shows part of the embodiment of Fig. 7 viewed at the back of the hand,

Fig. 9 is a partial sectional view along the line C - C of Fig. 7.

In Figs. 1 to Fig. 3, an electrical lighting unit comprises an electric bulb 1 of sound construction which contains a filament 2 and is supported in a plate 3, preferably of a hard resinous material. The plate 3 is adapted to fit the palm of a hand and is fixed to a holding means 4, preferably in the form of a glove. 65

The electric bulb 1 is mounted on the plate 3 in a bulb holder which is a bushing 5 secured to the plate by adhesive 6. 70

A transparent cover 7, enclosing the bulb 1, is of resinous material or glass and is fixed to the holding means 4 by heat pressing a plastic ring 8 thereon. A battery 9 is inserted in a battery holder 10 at the other side of the holding means 4. A switch 12 is installed on the holding means 4 opposite the thumb, and is connected to the battery 9 and the bulb 1 by conducting wire 11. 75

In this embodiment, by actuating the switch 12, the electric bulb on the palm can be lit or extinguished, and it thus allows for work to be done in darkness using both hands. As the electric bulb 1 is of a sound construction and is enclosed by the cover 7, there is little danger of damage 85

occurring.

In Figs. 4 to 6, another embodiment of the present invention suitable for the traffic policemen has two electric bulbs of different colour. An inner electric bulb 13 of sound construction is encircled by a ring-shaped electric bulb 14 also of sound construction. The inner bulb 13 has a small reflector plate 15 and 16 is a large reflector plate for the ring bulb 14. A partially lens shaped cover 17 encloses the bulbs 13 and 14 and is preferably of transparent plastic or similar material. The bulbs 13 and 14 are of different colours, for example, the inner bulb 13 can be white and the ring bulb 14 can be red. A holding means 18 preferably a glove has the bulb holder on the palm side thereof and has a battery 19 in the battery holder 20 on the other side. The electric bulbs 13, 14 and the battery 19 are connected through a switch 21 which is situated on the holding means opposite the thumb. By turning a gear of the switch 21 with the thumb the colour of the light may be changed or extinguished.

A contact point 23 on the thumb is connected to the switch 21 by conducting wire in the holding means 18, and contact points 22 and 22' situated above the switch 21 are connected to the bulbs 13 and 14. When the switch 21 is positioned such that the lights are extinguished, signals of different coloured lights can be produced by bringing into contact the contact point 23 with either of the contact points 22 or 22'.

By turning the gear of the switch 21 with the thumb, it is possible to light or extinguish either of the two electric bulbs of red and white colour, so that the traffic policemen can make traffic arrangements with the red light and examine a driver's license and carry out similar duties with the white light.

In Figs. 7 to 9 a further embodiment of the present invention is especially suitable for medical operators. An electric bulb 24 of sound construction contains a filament 25 and is supported by a plate 26 preferably of a hard plastic material. The plate 26 is formed to fit snugly in the palm and is secured to or forms part of a holding means 27 in the form of a U-shaped clip. The electric bulb 24 is fixed on the plate 26 in a bulb holder which is a bushing 28 secured to the plate by adhesive 29. A transparent cover 30 of plastic material or glass enclosing the bulb 24 is fixed to the holding means 27 by heat pressing a plastic ring 31 around the cover 30. A battery 32 is inserted in a battery holder 33 at the other side of the holding means 27 and is connected to the electric bulb 24 with some conducting wire 34. A switch 35 is installed on the holding means 27, opposite the thumb. In case of necessity, there may be

some moving contact points for signal use as shown in Fig. 4 and Fig. 5.

The holding means 27, being a U-shaped clip, enables the quick replacement and removal of the torch to and from the hand of an operator.

This invention may be carried out in other ways or embodied in other forms without departing from the essential characteristics thereof, the scope of this invention being indicated by the appended claims rather than by the foregoing description, and all changes which come within the meaning and range of equivalency in the claims are therefore intended to be embraced therein.

#### WHAT I CLAIM IS:

1. An electrical lighting device to be worn on the hand, comprising a front portion shaped to fit the palm of the hand integral with a back portion shaped to fit the back of the hand, the front portion having on its outside surface a holder for at least one electric light bulb and the back portion having on its outside surface a holder for a battery, and a switch positioned on the device to be operated by the thumb.

2. An electrical lighting device as claimed in claim 1 in which the bulb holder is a bushing secured to a plate of hard resinous material by adhesive and is enclosed within a transparent cover, said plate being secured to or forming part of the front portion.

3. An electrical lighting device as claimed in claim 2, in which the transparent cover is partially of lens-shaped formation.

4. An electrical lighting device as claimed in claim 1, 2 or 3 in which the bulb holder has mounted therein an inner bulb with a small reflector plate which is encircled by a ring-shaped bulb with a comparatively large reflector plate.

5. An electrical lighting device as claimed in claim 4, in which the two bulbs are of different colours.

6. An electrical lighting device as claimed in claim 4 or 5 including, in addition to said switch, contact points for selectively lighting said bulbs.

7. An electrical lighting device as claimed in any of claims 1 to 6 comprising a glove or mitten provided with a pair of cooperable switch contacts on the opposite sides of the bight between the thumb and the index finger.

8. An electrical lighting device to be worn on the hand, comprising a U-shaped clip having a bulb holder on the outside surface of one limb of the clip, a battery holder on the outside surface of the other limb of the clip and a switch positioned on the clip between the limbs to be operated by the thumb when the clip is fitted on to the hand with the bulb holder located on the palm of the hand and the battery holder

located on the back of the hand.

9. An electrical lighting unit constructed substantially as hereinbefore described with reference to and as illustrated in Figs. 1 to 5 3 of the accompanying drawings.

10. An electrical lighting unit constructed substantially as hereinbefore described with reference to and as illustrated in Figs.

4 to 6 of the accompanying drawings.

11. An electrical lighting unit constructed substantially as hereinbefore described with reference to and as illustrated in Figs. 7 to 9 of the accompanying drawings.

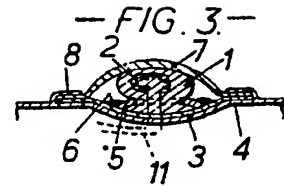
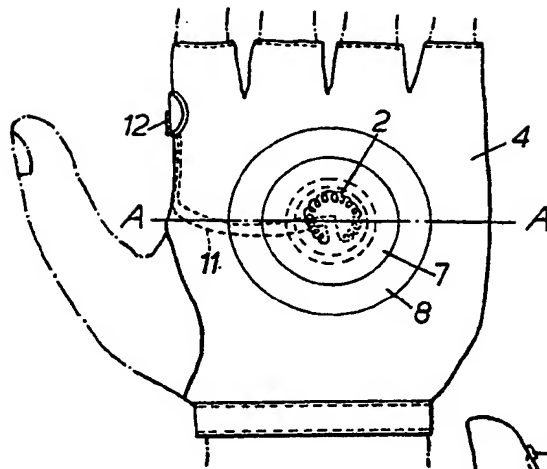
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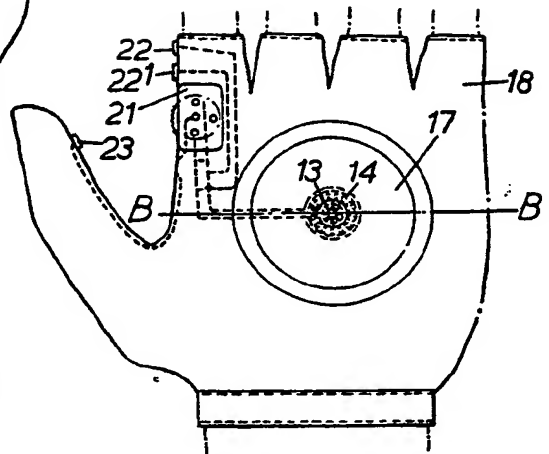
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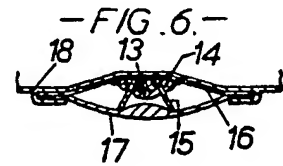
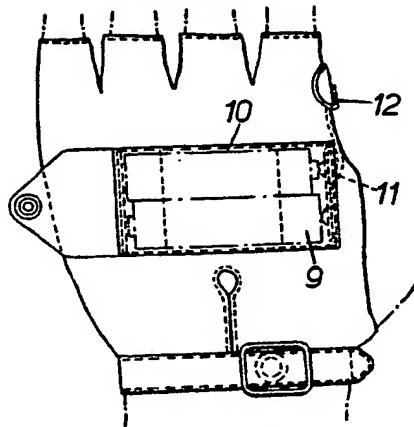
- FIG. 1.-



- FIG. 4.-



- FIG. 2.-



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COMPLETE SPECIFICATION

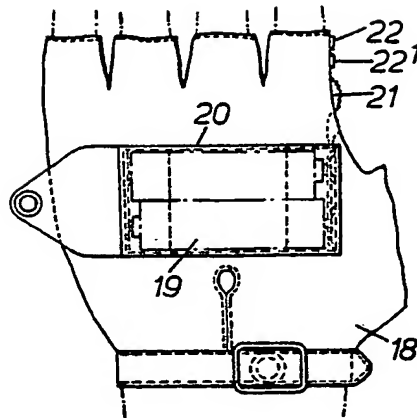
2 SHEETS

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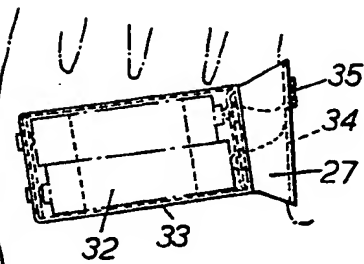
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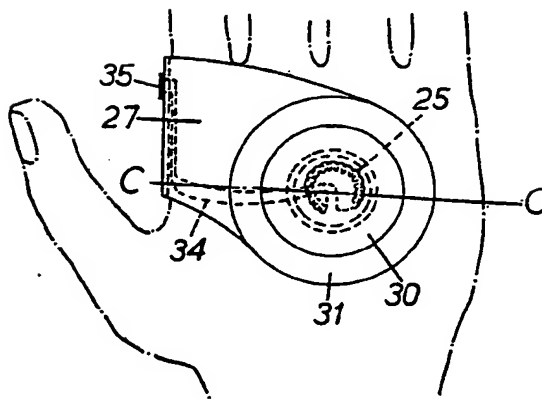
—FIG. 5.—



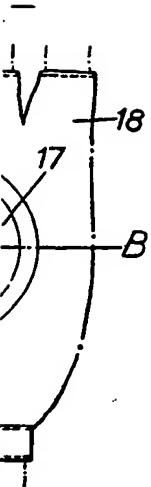
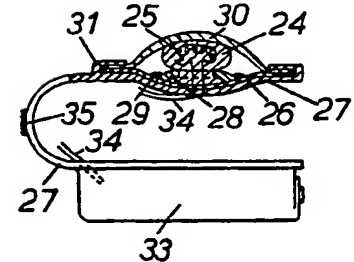
—FIG. 8.—



—FIG. 7.—



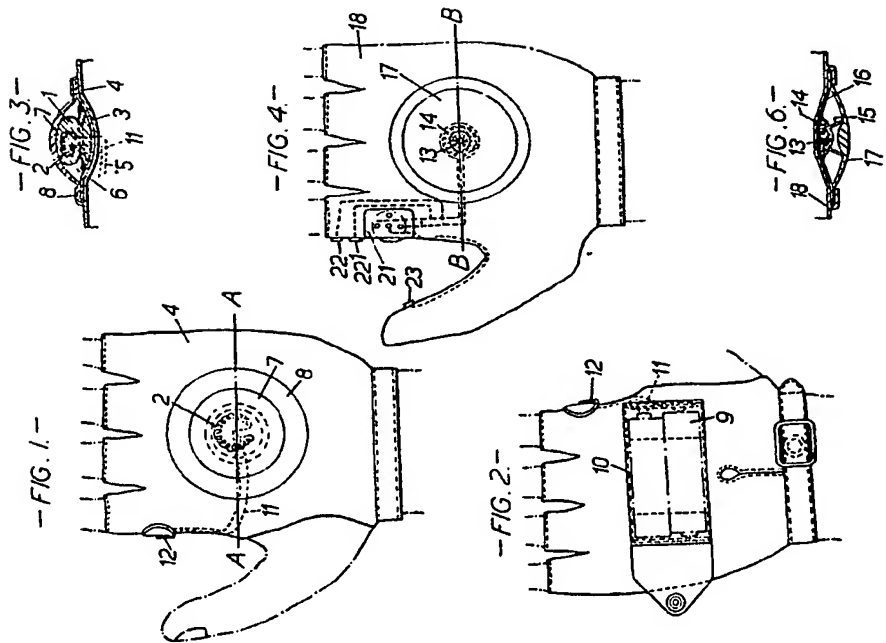
—FIG. 9.—



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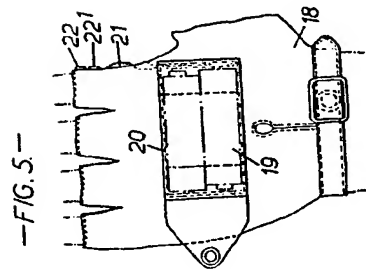
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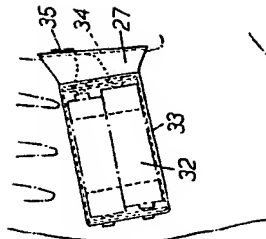
-FIG. 1.-

-FIG 4-

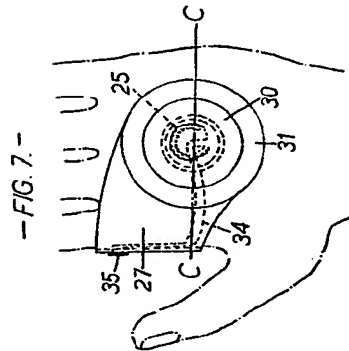
-FIG. 6-



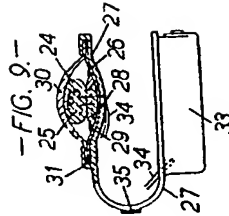
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-FIG 0-